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www.alvarion.com/company/locations

www.alvarion.com

Specifications

Radio

Frequency	4940 - 4990 MHz
Radio Access Method	Time Division Duplex (TDD)
Channel Bandwidth	5 MHz, 10 MHz
Central Frequency Resolution	5 MHz
Max Output Power (at antenna port)	AU: -10 dBm to 20 dBm, 1 dB steps* SU: -10 dBm to 20 dBm, automatically adjusted by ATPC
Max Input Power (at ant. port)	-45 dBm typical

Sensitivity, typical (dBm at antenna port, @10^{-6})	Modulation	1	2	3	4	5	6	7	8
	Level* (5 MHz)	-94	-93	-91	-89	-86	-82	-78	-76
	Level* (10 MHz)	-92	-91	-89	-87	-84	-80	-76	-74

* Modulation Level combines modulation scheme and coding gain.

Modulation Scheme (Adaptive)	OFDM: BPSK, QPSK, QAM 16, QAM 64
Antenna Port (AU-RE)	N-Type 50 ohm
Subscriber Integrated Antenna	19 dBi, 10.5° H/V, Integrated flat panel
AU Antenna	15 dBi, Sector 120° horizontal 9 dBi, Omni antenna

Data Communication

VLAN support	802.1q and Q-in-Q (802.3ad)
Layer-2 Traffic Prioritization	Based on IEEE 802.1p
Layer-3 Traffic Prioritization	IP ToS according to RFC791, DiffServ code points according to RFC2474
Layer-4 Traffic Prioritization	UDP/TCP port range
Security	WEP 128-bit, FIPS-197

Configuration and Management

Local & Remote Management	Monitor via Telnet, SNMP and Configuration Upload/Download
Remote Management Access	From Wired LAN, Wireless Link
Management Access Protection	Multilevel Password Configuration of remote direction (From Ethernet only, Wireless only, or both sides) Configuration of IP addresses of authorized stations
Software upgrade	Via TFTP and FTP
Configuration Up/Download	Via TFTP and FTP
SNMP Agents	SNMP v1 client, MIB II, Bridge MIB, Private BreezeACCESS 4900 MIB

Physical and Electrical

Type		Connectors	Electrical
SU-NI	Ethernet	10/100BaseT RJ-45, 2 embedded LEDs	Power consumption 25W
	Radio	10/100BaseT Ethernet RJ-45	AC input: 100-240VAC, 50/60Hz
	AC IN	3-pin AC power plug	
SU-RA, AU-RE	Indoor	10/100Base RJ-45 with waterproof sealing assembly	54 VDC from indoor to outdoor
AU-BS	Ethernet	10/100BaseT RJ-45, 2 embedded LEDs	Power consumption 30W (module plus outdoor unit) AC input: 100-240VAC, 50/60Hz 3.3VDC, 54V from power supply in backplane
	Radio	10/100BaseT Ethernet RJ-45	
BS-PS-AC (AC power supply)	AC-IN	3-pin power plug	Power consumption: 240W, full chassis (1 PS, 6 AU) AC input: 85-265VAC, 47-65Hz DC output: 54V, 3.3V
BS-PS-DC (DC power supply)	-48 VDC	3-pin DC D-Type 3 power pin plug Amphenol	Power consumption: 240W, full chassis (1 PS, 6 AU) DC input: -48 VDC nominal (-34 to -72), 10 A max. DC output: 54V, 3.3V

Standards Compliance

Type		Standard
EMC		FCC Part 15 class B
Safety		UL 60950, EN 60950
Environmental	Operation	ETS 300 019 part 2-3 class 3.2E for indoor units ETS 300 019 part 2-4 class 4.1E for outdoor units
	Storage	ETS 300 019-2-1 class 1.2E
	Transportation	ETS 300 019-2-2 class 2.3
Lightning Protection		EN 61000-4-5, class 3 (2kV)
Radio		FCC Part 90

Note: Environmental evaluation and exposure limit according to FCC CFR 47part 1, 1.1307, 1.1310
* not in all modulations (software dependent)

alvarion®
We're on your wavelength.

BreezeACCESS® 4900

Broadband Wireless Access at the Frontline of Homeland Security

Immediate and accurate information is a core requirement of any public safety communications system. As a result, the communications system used must be reliable and robust. Alvarion, a company well known for combining robustness and industry leading performance into its products, has integrated these principles into its latest offering for the homeland security market. As the global wireless broadband market leader, Alvarion has been providing rugged and reliable solutions to public safety organizations for over six years.

Building on this foundation, Alvarion introduces a new critical communications tool designed especially for the public safety sector - BreezeACCESS 4900. Providing secure and reliable connectivity in any terrain, environment and climate, the BreezeACCESS 4900 is well suited for voice, video and data applications in combining FIPS-197 government approved (AES-based) encryption, advanced quality of service (QoS) and high throughput speeds.

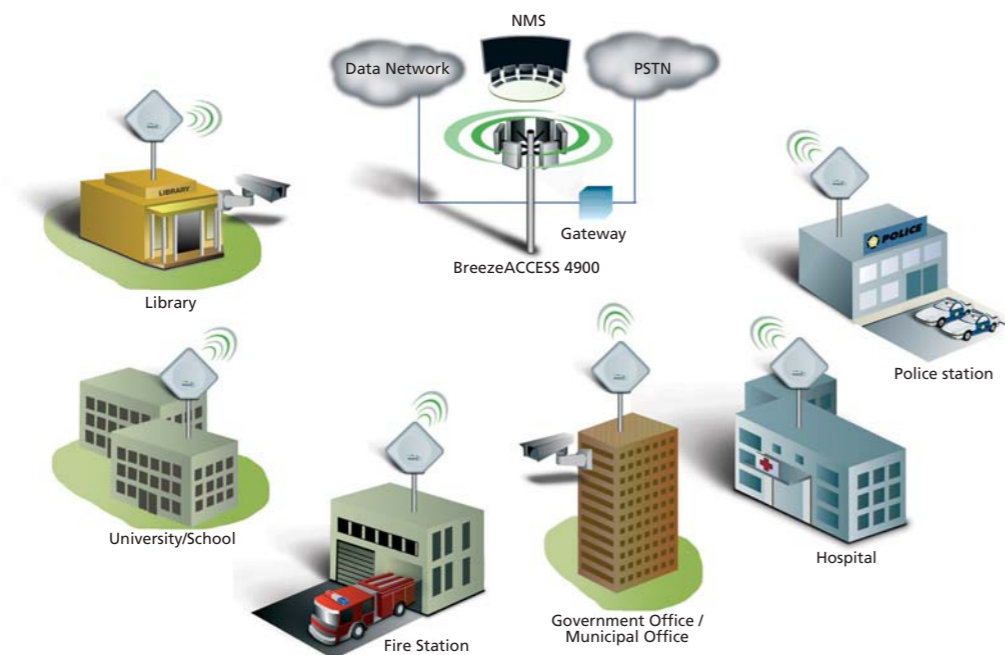## Secure Broadband Access Beyond the Line-of-Sight

Product Highlights

In designing the BreezeACCESS 4900, we leveraged our more than ten years of experience deploying wireless broadband systems with our long history developing and implementing OFDM technology to overcome NLOS challenges. The results are the utmost in reliable, secure communications in the 4.9 GHz band. Capable of being deployed in both point-to-point and point-to-multipoint configurations, and able to co-exist with other systems in mixed spectrum architectures, the ultra-flexibility of the 4900 enables each network to be tailored in its configuration to efficiently handle a multitude of applications.

BreezeACCESS 4900 is now the solution of choice for public safety, medical emergency, and government security and surveillance applications offering the industry's richest features:

- Spectrally efficient, OFDM technology to support high capacity, non-line-of-sight connectivity
- Always-on adaptive modulation, automatic transmit power control (ATPC), and automatic distance learning for optimal link transmission
- Complies with the high power mask requirements of 4.9 GHz FCC regulation. Meeting the high power mask regulations translates into more than 20 times the range than products that meet the low power mask regulations. In this band, regulations are on unit output power and the antenna gain that can be used with the product

- Highest number of calls in a PTMP system designed for the public safety, up to 150 calls per sector with MOS higher than 4.0
- Wireless link prioritization enabling mission critical applications, such as video and voice with end-to-end quality-of-service, even while sharing the system with low priority applications such as data
- Supports both 5 and 10 MHz channel options for flexible network planning for interference avoidance and increased network capacity
- Mixed spectrum integration options for multi-band layering, including Wi-Fi integration enabling commercially off-the-shelf devices at the network edge
- Available 100% environmental outdoor form factor with ports for integration of other devices, such as video cameras and traffic management systems
- Advanced extensive access suite, including quality of service (QoS), security and extensive management
- Redundancy, CPE automatically synchronized with Best AU available
- 10 LEDs SNR bar display on outdoor unit for fast antenna alignment without the need for external tools or monitors; even easier installation with automatic search of 5 and 10 MHz channels
- Superior management options using SNMP, the user-friendly BreezeCONFIG installation and monitoring utility, and the AlvariSTAR carrier grade NMS platform.

Library

University/School

Fire Station

NMS

Data Network

PSTN

Gateway

BreezeACCESS 4900

Government Office / Municipal Office

Police station

Hospital

When There is No Room for Error

Key Benefits

- Superior performance and distance using high power requirements of the FCC
- VPN services based on VLAN (Access, Trunk, Hybrid)
- Enhanced quality of service (QoS) featuring CIR/MIR and prioritization based on Q-in-Q (802.3ad), DiffServ and port based to support data, VoIP and video combined in a single network
- Advanced security mechanisms including WEP128, AES 128 encryption (without impact on throughput) and FIPS 197 compliance
- Out-of-the-box simple and fast installation
- "Pay as you grow" expansion philosophy through modular and scalable network components
- Seamless integration with other BreezeACCESS products and bands to preserve existing investments
- Mobility by integration with Alvarion's BreezeACCESS Complete Spectrum™ Solution

Wireless Broadband that Breaks Barriers

BreezeACCESS 4900 offers an unmatched combination of wide coverage, high capacity and value-added features to provide citywide and countywide secure, wireless connectivity that works in NLOS conditions. Leveraging the 4.9 GHz licensed spectrum allocated for public safety, the BreezeACCESS 4900 is the ideal solution for regional backhaul of mobile public safety infrastructure, connecting buildings, traffic lights and video security/traffic cameras, supporting SCADA applications and providing a regional VoIP network.

Complete Spectrum Solution

Alvarion's Complete Spectrum Solution enables the BreezeACCESS 4900 to integrate seamlessly into existing BreezeACCESS networks, thereby protecting existing network investments. Supporting both fixed and mobile platforms at multiple frequencies, the Complete Spectrum enables the deployment of highly customized networks with subscriber speeds up to 54 Mbps. Using the full range of products, the Complete Spectrum Solution can support simultaneous deployments of systems at 900 MHz, 2.4 GHz, 3.5 GHz, 4.9 GHz and the entire 5 GHz band.

Alvarion's mobile broadband platform, the BreezeACCESS 900, is currently on patrol nationwide providing real-time, high-speed connectivity to law enforcement vehicles and other agencies. Combining the BreezeACCESS 900 with the BreezeACCESS 4900 means that municipalities and public safety organizations can have an integrated network solution to meet both their fixed and mobile broadband communications needs.

System Components
The BreezeACCESS 4900 consists of a base station access unit (AU) and two models of customer premises equipment (CPE) to support various deployment scenarios.

The Access Unit (AU)
Installed at the base station site, the AU communicates with the CPEs. For backbone connections, each AU connects to the network through a standard IEEE 802.3 Ethernet 10/100BaseT (RJ-45) interface and towards the CPE using standard CAT-5 cable to connect to the outdoor unit.

For a modular base station, the access unit can be installed in the universal BreezeACCESS 19" 3U chassis. Each chassis can hold up to six AU modules of any frequency band, providing reliable access to a maximum number of subscribers. Two power supply modules, either AC or DC, can be employed in the chassis for power supply redundancy.

The Customer Premises Equipment (CPEs)
Installed at locations that requires service, either backhaul or access connectivity, the CPE enables data connections to support single or multiple end user subscribers. CPEs provide an efficient platform for always-on, high-speed internet and intranet services. Each CPE connects to the network through a standard IEEE 802.3 Ethernet 10/100BaseT (RJ-45) interface and connects to the outdoor unit via CAT-5 cable. Each CPE includes a small indoor unit, CAT-5 indoor-outdoor cable, pole-mounted outdoor unit and integrated antenna. Two CPE models are available:
- The SU-A-4900-BD (with integrated antenna)
- The SU-E-4900-BD (without antenna)